

WHAT IS CLAIMED IS:

1 1. A method for communication between a transmitter and a receiver
2 comprising:

3 generating an analog waveform corresponding to an information character
4 of an encoding alphabet, said waveform defining a symbol, said waveform being cyclical
5 at the symbol rate;

6 transmitting, from said transmitter to said receiver via a communications
7 channel, a source signal characterized by said waveform matching said symbol, said
8 communications channel having a channel characterization including noise, in order to
9 yield a received signal; and

10 at said receiver, extracting from said received signal, information in the
11 form of groups of pulses, said pulses being separated by silences of arbitrary duration
12 greater than time between individual pulses, wherein the number of pulses in each pulse
13 group corresponds to one of said information characters represented by said symbol, and
14 wherein said pulses have a pulse rate greater than the frequency of said symbol.

1 2. The method of claim 1, wherein said analog waveform is selected
2 from the group consisting of sinusoidal, ramp, asymmetric, sawtooth, square and channel-
3 optimized symbol.

1 3. The method according to claim 1, wherein said analog waveform
2 comprises mixtures of different waveform types, including time-varying channel-
3 optimized symbols.

1 4. The method according to claim 1 wherein said pulses have a
2 peak to peak amplitude of at least zero to a maximum relative to non-oscillation.

1 5. A system for communication between a transmitter and a receiver
2 comprising:

3 means in said transmitter for generating an analog waveform
4 corresponding to an information character of an encoding alphabet, said waveform
5 defining a symbol, said waveform being cyclical at the symbol rate and for conveying a
6 source signal characterized by said waveform matching said symbol, said
7 communications channel having a channel characterization including noise, in order to
8 yield a received signal; and

9 means in said receiver for extracting, from said received signal,
10 information in the form of groups of pulses, said pulses being separated by silences of
11 arbitrary duration greater than time between individual pulses, wherein the number of
12 pulses in each pulse group corresponds to one of said information characters represented
13 by said symbol, and wherein said pulses have a pulse rate greater than the frequency of
14 said symbol.

1 6. The system of claim 1, wherein said analog waveform is selected
2 from the group consisting of sinusoidal, ramp, asymmetric, sawtooth, square and channel-
3 optimized symbol.

1 7. The system according to claim 1, wherein said analog waveform
2 comprises mixtures of different waveform types, including time-varying channel-
3 optimized symbols.

1 8. The method according to claim 1 wherein said pulses have a peak
2 to peak amplitude of at least zero to a maximum relative to non-oscillation.